Global economy: Growth and distribution

Danny Quah
Economics Department LSE
http://econ.lse.ac.uk/staff/dquah/
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LSE

Growth, trade, income distribution across 6×10^9

1. Growth and distribution: Differential effects
2. Trade and distribution: Differential effects
3. (Skill-biased technical change)
4. Evidence: The BIG reduced form

100 years of world growth

- Six billion humans, 50× increase in world income
- But ...
  - 1993, richest 1% world's humans as much income as poorest 57%
  - ... average income top 5% world population 114× bottom 5%
  - 1988–1993, while average world income increased 6%, average bottom 5% fell one-quarter and average top 5% rose one-eighth

Source: Maddison; Milanovic 2005

Kuznets curve

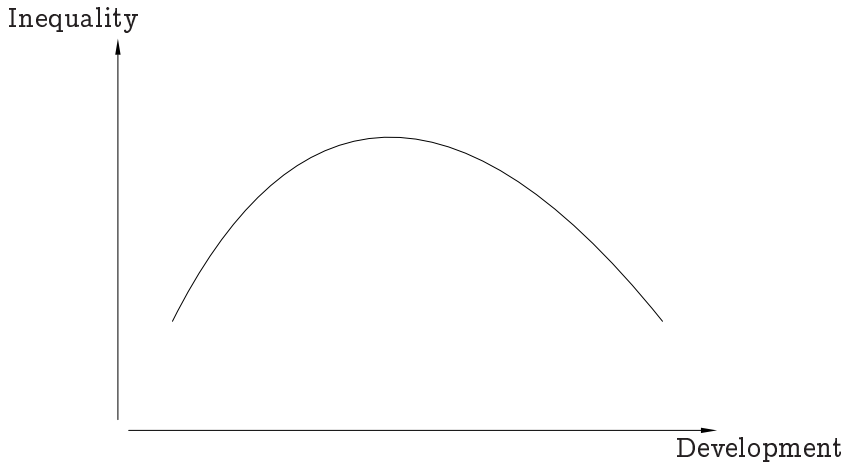


Figure 1: The Kuznets curve, stylized

Models: Simultaneity and causality

- Sectoral shifts (Kuznets, 1955)
- Incentives (including economics of superstars, Rosen 1981)
- Credit market imperfection (Galor and Zeira, 1993)
- Distortionary redistribution (Persson and Tabellini, 1991; Benabou, 1996)
- . . . , Deininger and Squire, 1998; Banerjee and Duflo, 2003; Dollar and Kraay, 2002; Quah, 2003

Credit market imperfections

- Minimum size investment needed (nonconvexity)
- Imperfect loans/capital market
- Dynamic polarization
- The worse the imperfection, potentially the lower is growth
- The higher the inequality, potentially the lower is growth

Technology Skilled (s). Unskilled (n). Physical capital K.

$$Y^{(n)} = K F^{(n)} + \delta^{(n)}$$

$$Y^{(s)} = \begin{cases} (K-s)F^{(s)} + \delta^{(s)}, & \text{if } K \geq s \\ 0 & \text{otherwise} \end{cases}$$

- $F^{(n)} \geq 1$, $\delta^{(n)} > 0$. $F^{(s)} \gg F^{(n)}$, $\delta^{(s)} \gg \delta^{(n)}$. (Fig. 2)
- Skills acquisition fixed cost $sF^{(s)} > 0$
- Special case of $Y = F(K, h)$

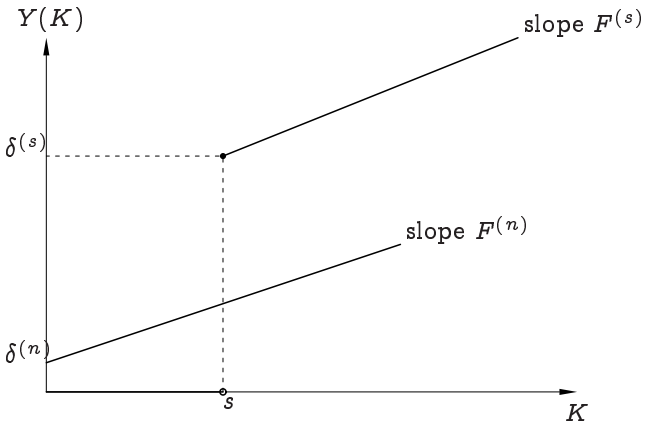


Figure 2: Non-convex technology

Imperfect capital market $R > F^{(s)} > F^{(n)}$

People 2-period lived overlapping generations. Each generation receives bequest; skills up and invests; produces; then consumes and leaves bequest:

$$\max_{C,K'} U(C, K')$$
$$\text{s.t. } C + K' \leq W$$
$$W(K, R) = \begin{cases} F^{(n)}K + \delta^{(n)} & \text{for } K \in [0, K^{(p)}) \\ RK + \delta^{(s)} - sR & \text{for } K \in [K^{(p)}, s) \\ F^{(s)}K + \delta^{(s)} - sF^{(s)} & \text{for } K \in [s, \infty). \end{cases}$$

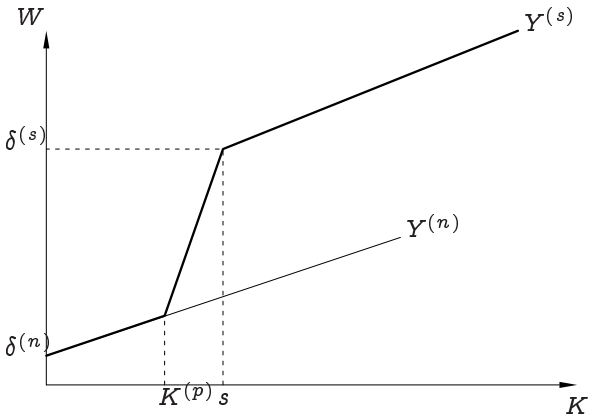


Figure 3: Opportunity set

1. If borrow, only to reach $K = s$.
2. Will not borrow if initial $K < K^{(p)}$, endogenously-determined threshold
3. Borrowing fills in the segment $[K^{(p)}, s]$, according to $W = \delta^{(s)} - (s - K)R$.

Assume U Cobb-Douglas, i.e.,

$$U(C, K') = (1 - \beta)\log C + \beta \log K', \quad \beta \in (0, 1)$$

$$\Longrightarrow \; C = (1 - \beta)W \quad \text{and} \quad K' = \beta W$$

$$\max U \text{ increasing in } W(K, R)$$

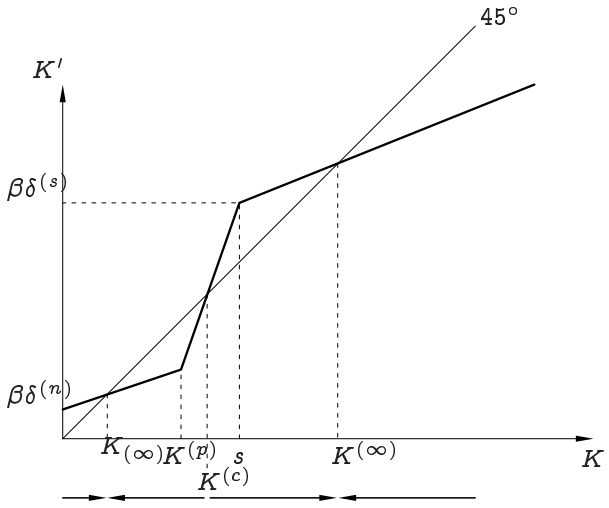


Figure 4: Dynamics

Conclusions

1. Stable and unstable dynamics. Polarization
2. Complete equality at $K > K^{(c)}$ better than mean-preserving inequality taking some fraction of the population below threshold.
3. The higher is R, the more severe the effects.
4. The higher is inequality, the more severe the effects.

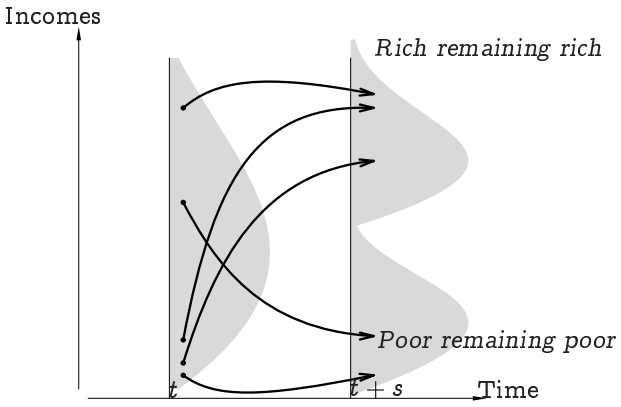


Figure 5: Emerging twin peaks

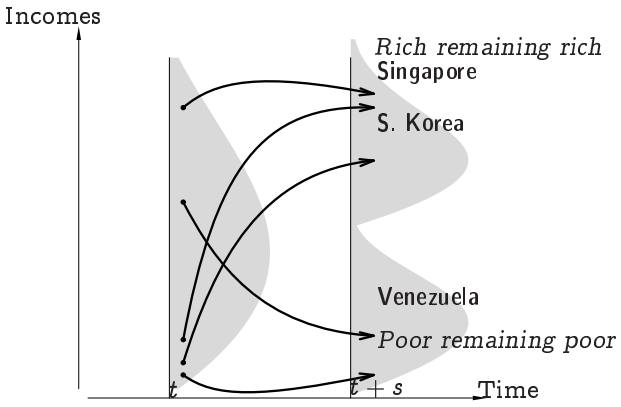


Figure 6: Emerging twin peaks

Distortionary redistribution

- Redistribution is distortionary, thereby harming economic growth.
- The greater is inequality, the greater the desire for redistribution.
- In democratic societies this translates into higher actual redistribution.

Thus, higher inequality $\Longrightarrow$ lower growth through distortionary redistribution.

Stolper-Samuelson Theorem

x aircraft (capital, skilled labour k)

z textiles or consumer electronics (unskilled labour n)

Zero-profits:

$$p_x = k_x R + n_x W$$
$$p_z = k_z R + n_z W$$

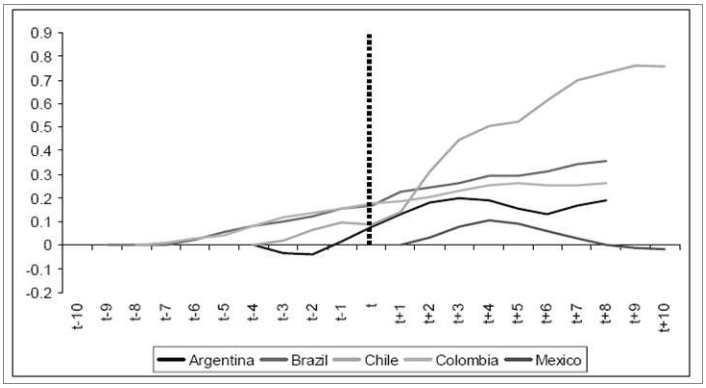
- System each for US and China
- Increased inequality in the US; decreased in China?

Annual earnings US men, aged 35–44, in $2005

	1973	2005
Median	45785	40964
Mean	49705	54525

Source: Paul Krugman, 2007 James Meade Lecture, LSE

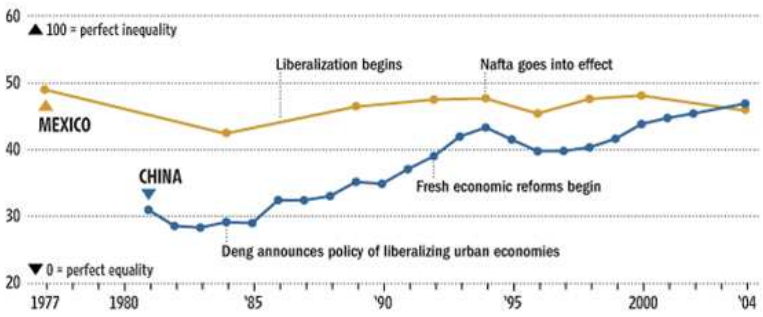
Skill premium: Central America, before and after liberalization



Source: Paul Krugman, 2007 James Meade Lecture, LSE

More in Goldberg and Pavcnik, 2007

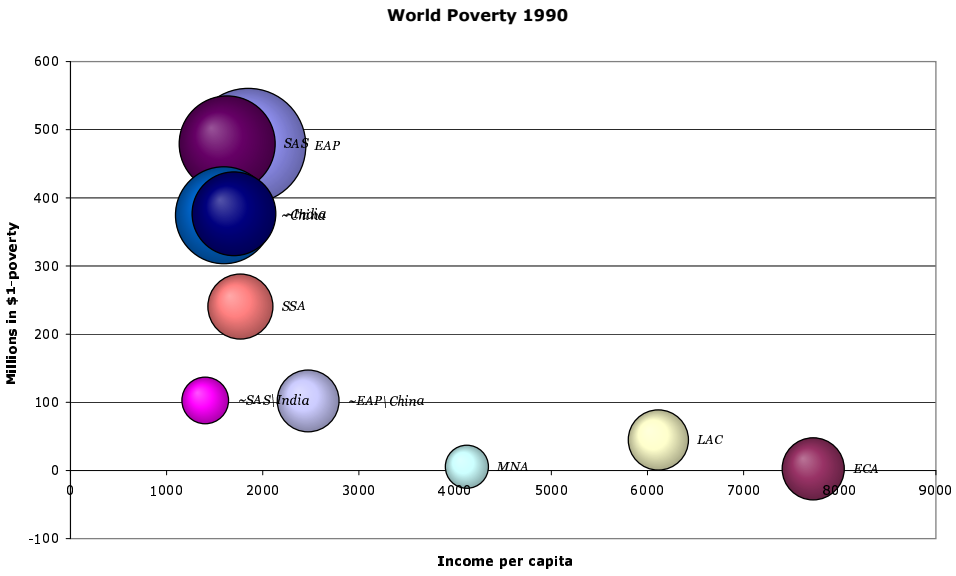
From even the Wall Street Journal:

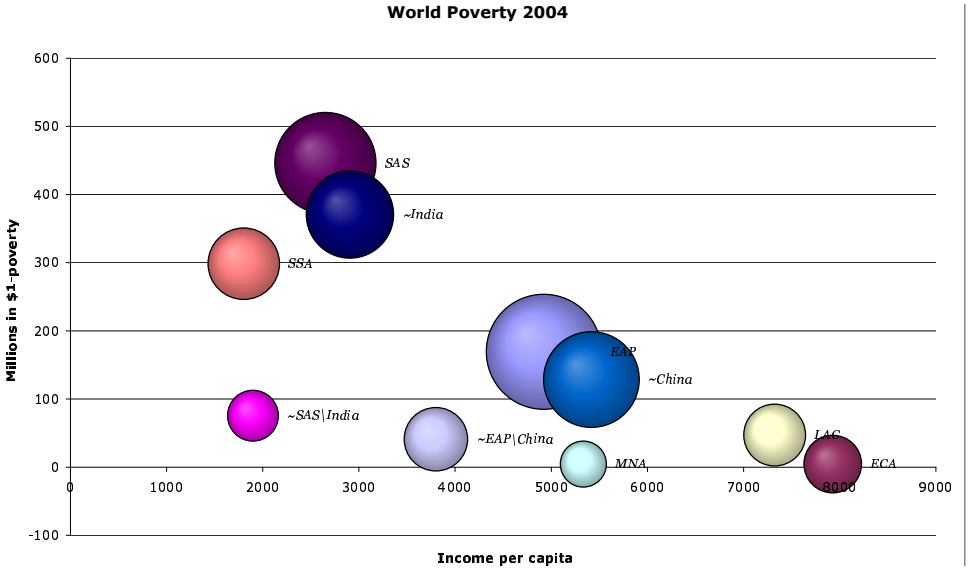


The BIG reduced-form: World growth and poverty dynamics

	1981	1990	1999	2004
GDP 10^{12} PPP$	24.4	33.1	43.3	52.2
per capita PPP$	5407.6	6291.5	7231.1	8198.5
World's $1-poor ($10^6$)	1470.3	1247.7	1108.6	969.5
China's $1-poor ($10^6$)	633.7	374.3	222.8	128.4
Remainder (10^6)	836.6	873.4	885.8	841.1

Table 1: **The importance of China** (PPP$ means constant 2000 international$)





CONCLUSIONS

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